

WHAT IS CLAIMED IS:

1. An assembly for use in continuously forming a plurality of lengths of flexible noise attenuating cutting line for use in rotary vegetation trimmers comprised of at least two monofilament polymer strands bonded together in a twisted disposition, said assembly comprising: a housing having a chamber therein; a channel disposed within said housing above said chamber adapted for fluid communication with a source of molten monofilament polymer material for directing said material to said chamber; a breaker plate disposed in said chamber, said plate defining an inclined inner portion and a substantially planar outer portion, said inner portion directing molten material from said channel onto said outer portion; a plurality of extrusion dies disposed in said outer portion of said breaker plate, each of said dies defining a die hole configuration in the lower end thereof for the extrusion of at least two monofilament polymer strands therethrough; and a drive assembly for rotating each of said dies at a predetermined speed to effect a twisting together of the molten strands of polymer material being extruded through each of said dies.

2. The assembly of claim 1 wherein said drive assembly synchronously rotates each of said dies at said predetermined speed to define an equal number of twists per foot in the lengths of formed cutting line.

3. The assembly of claim 1 wherein said drive assembly comprises a plurality of drive cylinders, each of said cylinders engaging one of said dies, a plurality of gears, each of said gears being operatively connected to one of said drive cylinders and at least one of the other gears, and a drive motor operatively connected to one of said gears for synchronously rotating all of said gears whereby said dies are caused to undergo synchronous rotation.

4. The assembly of claim 3 wherein each of said dies has elongated body portion defining a drive engagement surface, said die hole configuration being disposed in a lower extended end of said body portion and wherein each of said drive cylinders defines an interior drive engagement surface abutting a drive engagement surface on one of said dies so that synchronous rotation of said drive cylinders effects synchronous rotation of said dies.

5. The assembly of claim 1 wherein said die hole configuration in each of said dies comprises a pair of circular holes of equal diameter spaced apart a distance less than said diameter.

6. The assembly of claim 1 wherein said die hole configuration in each of said dies comprises a plurality of holes connected together at adjacent edge portions.

7. The assembly of claim 1 wherein said die hole configuration in each of said dies comprises a single hole having the configuration of the cross-section of an oblate spheroid.

8. The assembly of claim 1 wherein said die hole configuration in each of said dies comprises a pair of holes connected together by a thin web portion.

9. The assembly of claim 1 wherein the die hole configuration in at least one of said dies is different from the die hole configuration in at least one of the other of said dies.

10. The assembly of claim 5 wherein said drive assembly synchronously rotates each of said dies at said predetermined speed to define an equal number of twists per foot in the lengths of formed cutting line.

11. The assembly of claim 6 wherein said drive assembly synchronously rotates each of said dies at said predetermined speed to define an equal number of twists per foot in the lengths of formed cutting line.

12. The assembly of claim 7 wherein said drive assembly synchronously rotates each of said dies at said predetermined speed to define an equal number of twists per foot in the lengths of formed cutting line.

13. The assembly of claim 8 wherein said drive assembly synchronously rotates each of said dies at said predetermined speed to define an equal number of twists per foot in the lengths of formed cutting line.

14. The assembly of claim 9 wherein said drive assembly synchronously rotates each of said dies at said predetermined speed to define an equal number of twists per foot in the lengths of formed cutting line.

15. The assembly of claim 1 wherein said drive assembly comprises a planetary gear assembly operatively connected to said extrusion dies for synchronously rotating each of said dies at said predetermined speed.

16. The assembly of claim 15 wherein said die hole configuration in each of said dies comprises a pair of circular holes of equal diameter spaced apart a distance less than said diameter.

17. The assembly of claim 15 wherein said die hole configuration in each of said dies comprises a pair of holes connected together at adjacent edge portions.

18. The assembly of claim 15 wherein said die hole configuration in each of said dies comprises a pair of holes connected together by a thin web portion.

19. The assembly of claim 15 wherein the die hole configuration in at least one of said dies is different from the die hole configuration in at least one of the other of said dies.

20. An assembly for use in continuously forming a plurality of lengths of flexible noise attenuating cutting line for use in rotary vegetation trimmers comprised of one or more twisted monofilament polymer strands, said assembly comprising: a housing having a chamber therein; a channel disposed within said housing above said chamber adapted for fluid communication with a source of molten monofilament polymer material for directing said material to said chamber; a breaker plate disposed in said chamber, said plate defining an inclined inner portion and a substantially planar outer portion, said inner portion directing molten material from said channel onto said outer portion; a plurality of extrusion dies disposed in said outer portion of said breaker plate, each of said dies defines defining a die hole configuration in the lower end thereof for the extrusion of one or more monofilament polymer strands therethrough; and a drive assembly for rotating each of said dies at a predetermined speed to effect a twisting of the molten strand or strands of polymer material being extruded through each of said dies.

21. The assembly of claim 20 wherein said drive assembly synchronously rotates each of said dies at said predetermined speed to define an equal number of twists per foot in the lengths of formed cutting line.

22. The assembly of claim 20 wherein said drive assembly comprises a plurality of drive cylinders, each of said cylinders engaging one of said dies, a plurality of gears, each of said gears being operatively connected to one of said drive cylinders and at least one of the other gears, and a drive motor operatively connected to one of said gears for synchronously rotating all of said gears whereby said dies are caused to undergo synchronous rotation.

23. The assembly of claim 22 wherein each of said dies has elongated body portion defining a drive engagement surface, said die hole configuration being disposed in a lower extended end of said body portion and wherein each of said drive cylinders defines an interior drive engagement surface abutting a drive engagement surface on one of said dies so that synchronous rotation of said drive cylinders effects synchronous rotation of said dies.

24. The assembly of claim 20 wherein said die hole configuration in each of said dies comprises a pair of circular holes of equal diameter spaced apart a distance less than said diameter.

25. The assembly of claim 24 wherein said drive assembly synchronously rotates each of said dies at said predetermined speed to define an equal number of twists per foot in the lengths of formed cutting line.

26. The assembly of claim 20 wherein said die hole configuration in each of said dies comprises a single hole having the configuration of the cross-section of an oblate spheroid.

27. The assembly of claim 26 wherein said drive assembly synchronously rotates each of said dies at said predetermined speed to define an equal number of twists per foot in the lengths of formed cutting line.

28. An assembly for use in continuously forming a plurality of lengths of flexible noise attenuating cutting line for use in rotary vegetation trimmers comprised of one or more twisted monofilament polymer strands, said assembly comprising: a housing; a plurality of extrusion dies disposed in said housing, each of said dies defining a die hole configuration in the lower end thereof for the extrusion of one or more monofilament polymer strands therethrough; a fluid flow pathway disposed within said housing adapted for fluid communication with a source of molten monofilament polymer material for directing said material onto said dies; and a drive assembly for rotating each of said dies at a predetermined speed to effect a twisting of the molten strand or strands of polymer material being extruded through each of said dies.

29. The assembly of claim 28 wherein said drive assembly synchronously rotates each of said dies at said predetermined speed to define an equal number of twists per foot in the lengths of formed cutting line.

30. The assembly of claim 28 wherein said drive assembly comprises a plurality of drive cylinders, each of said cylinders engaging one of said dies, a plurality of gears, each of said gears being operatively connected to one of said drive cylinders and at least one of the other gears, and a drive motor operatively connected to one of said gears for synchronously rotating all of said gears whereby said dies are caused to undergo synchronous rotation.

31. The assembly of claim 30 wherein each of said dies has elongated body portion defining a drive engagement surface, said die hole configuration being disposed in a lower extended end of said body portion and wherein each of said drive cylinders defines an interior drive engagement surface abutting a drive engagement surface on one of said dies so that synchronous rotation of said drive cylinders effects synchronous rotation of said dies.

32. The assembly of claim 28 wherein said die hole configuration in each of said dies comprises a pair of circular holes of equal diameter spaced apart a distance less than said diameter.

33. The assembly of claim 28 wherein said die hole configuration in each of said dies comprises a pair of holes connected together at adjacent edge portions.



34. The assembly of claim 28 wherein said die hole configuration in each of said dies comprises a plurality of holes connected together at adjacent edge portions.

35. The assembly of claim 28 wherein said die hole configuration in each of said dies comprises a single hole having the configuration of the cross-section of an oblate spheroid.

36. The assembly of claim 29 wherein said die hole configuration in each of said dies comprises a pair of circular holes of equal diameter spaced apart a distance less than said diameter.

37. The assembly of claim 29 wherein said die hole configuration in each of said dies comprises a single hole having the configuration of the cross-section of an oblate spheroid.